UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
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170615

ACTION MEMORANDUM

DATE: SEP 30 2005

SUBJECT: Request for a CERCLA Removal Action at the Matteo Iron and Metal Site, West Deptford, Gloucester County, New Jersey

FROM: Nick Magriples, On-Scene Coordinator
Removal Action Branch

TO: George Pavlou, Director
Emergency and Remedial Response Division

THRU: Richard C. Salkie, Chief
Removal Action Branch

Site No.: KD

I. PURPOSE

The purpose of this Action Memorandum is to request and document approval for a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) removal action at the Matteo Iron and Metal Site (Site), West Deptford, Gloucester County, New Jersey. The Site meets the criteria for a removal action under the CERCLA as described in Section 300.415 of the National Contingency Plan (NCP).

The total removal action project ceiling for this action is $134,000, of which $107,000 is for contract mitigation and will be funded from the Regional removal allowance. There are no nationally significant precedent-setting issues associated with the proposed removal action.

II. SITE CONDITIONS AND BACKGROUND

The Comprehensive Environmental Response, Compensation and Liability Information System ID Number for the Site is NJD011770013. The removal action is considered time-critical.

A. Site Description

1. Removal Site Evaluation (RSE)

In May 2004, the New Jersey Department of Environmental Protection (NJDEP) completed a Remedial Investigation (RI) and a Remedial Action Selection Evaluation for the Site. In February 2005, the United States Environmental Protection Agency (EPA), Removal Action Branch (RAB) received a verbal request from the NJDEP to assess the Site for removal action consideration. EPA subsequently received information from the NJDEP concerning the contamination at the Site. NJDEP submitted a written request to EPA on June 6, 2005 to consider the Site for a CERCLA removal action.

Several site visits were conducted by the RAB between March and April 2005. It was observed that the active scrap yard is only fenced on the eastern boundary along Crown Point Road and a portion of the northeast corner. The scrap recycling facility receives metal from customers who drive onto the pavement on the eastern portion of the scrap yard and then onto a weight scale. Customers drop off metal at various locations in the yard, depending on the type of material being delivered and its designated collection point at the facility. Some of the collection points are situated on the unpaved areas of the yard. The unpaved area consists of disturbed soil due to the heavy machinery that tracks through this area and from efforts by the company to cleanup the yard of excessive scrap metal. It was observed that there would be a potential for dust to be generated in this operation under dry weather conditions. Based upon site observations, soil was apparently being transferred by vehicular tracking from the unpaved portion of the yard to the paved areas leading towards the entrance of the facility, indicating the potential for offsite migration.

During the tour of the Site, five intact 55-gallon drums and drum remnants were identified scattered in the woods located in the southeast portion of the Site between the scrap yard and the automobile repair shop. These drums appeared old and rusted. Some had no bung caps and were laying on their sides. The area in which these drums were present was within 100 feet of Crown Point Road and readily accessible.

Crushed battery casings are present throughout most of the northern portion of the Site. The casings visibly protrude from the ground surface, including along the banks of Hessian Run. Casings are also evident in the tidal marshlands. Observations made during extensive test pits conducted by the NJDEP revealed that most of the buried battery casings extend beyond the shoreline that existed in the 1940's.

Trails are present throughout the Site from off-site areas. There are at least seven established trails into the southern portion of the Site. Most of these trails lead directly to or near the trailer park. In addition, the central portion of the Site where the crushed battery casings are land filled is accessible via land from the rear of the scrap yard. Aside from some of the dump areas, the landfill and the trails, most of the Site is heavily vegetated. Crushed casings were evident inland

along the northern portion of the Site. Relatively new glass bottles, beer cans, shot gun shells, cap gun ammo, and other materials were observed, indicating that the Site is accessed and used for recreational purposes. The remnants of a campfire were noted on the landfill in the northwest portion of the Site in the vicinity of crushed battery casings. This campfire was situated at the end of a trail leading directly from the trailer park. An unvegetated circular area was noted near the campfire which may be used for riding bikes and all-terrain vehicles. The southern edge of the landfill area is less than 400 feet from the trailer park. During the initial site visit, two youths were observed in the central portion of the field walking westward on the Site.

During the period April 27-29, 2005, EPA personnel and contractor representatives from the Removal Support Team (RST) and the Site Assessment Team (SAT) conducted a sampling event at the Site to support an Integrated Assessment (IA). The effort included the collection of 82 surface soil samples from the Site, the adjacent trailer park, and the one adjoining residence east of the scrap yard. The samples were screened in the field using an X-Ray Fluorescence (XRF) unit for lead and an Immunoassay method for PCBs. Approximately 20% of the field-screened samples were sent to a Contract Laboratory Program (CLP) lab for analysis using Inductive-Coupled Plasma (ICP) emission spectroscopy for Target Analyte List (TAL) Metals confirmation and Pesticide/PCBs confirmation analyses. One of the five drums identified in the southeast portion of the Site was found to contain some liquid. A sample collected for Hazard Categorization (Hazcat) field screening analysis did not identify any hazards and it was concluded that the sample was likely dirty rain water.

During the April 27-29, 2005 assessment activities at the Site, standing water was observed on at least half of the Site from the flooding that had occurred along the Delaware River earlier in the month. It was reported at the time of the flooding that a dense-grade aggregate barrier was erected by the owner of the trailer park along a portion of the boundary between the trailer park and the Site. It primarily extended along the northwestern edge of the trailer park and was several feet high at its maximum height. The purpose apparently was to keep flood water from retreating from the Site back through the trailer park on its way to Woodbury Creek. The western portion of the trailer park was reportedly flooded during this period.

The known key problem areas at the Site include: the crushed battery casings throughout the northern portion of the Site, along the southern bank of Hessian Run and within its sediments; the on-site contaminated soils; and the contaminated sediments in Hessian Run.

2. Physical location

The Site is located at 1708 U.S. Highway 130 (a.k.a Crown Point Road) in West Deptford, Gloucester County, New Jersey and is situated just west of Interstate Highway 295/Route 130 (see Figure 1). The eastern portion of the Site, approximately 5 acres, is partially paved with asphalt and contains several buildings which support an active scrap metal recycling business. The remainder of the Site, approximately 75 acres, is comprised predominantly of heavily vegetated, undeveloped land which is bordered by Woodbury Creek to the west, Hessian Run to the north, and a residential trailer park to the south. There are at least 100 hundred trailers

present in the park. A residence and an automobile repair shop are situated to the east and southwest of the scrap yard, respectively. Two buried utility lines pass through the northwestern portion of the Site.

The Site is located approximately 1.2 miles from the Delaware River at the confluence of Woodbury Creek and Hessian Run. According to the RI, tidal fluctuations range from approximately 5.4 feet at neap tides to approximately 6 feet at spring tides. Tidal currents are strong in this area. At low tide, Woodbury Creek is ten feet deep, whereas Hessian Run becomes a narrow stream less than a foot deep. Based on floodplain data, at least two-thirds of the Site is situated within the 100-year flood plain at nine feet above mean sea level. The flood conditions that occurred in April 2005 were commensurate with this type of inundation.

The Site is situated in the Woodbury-Hessian Run marshes, which are freshwater tidal marshlands (see Figure 2). Woodbury Creek has one of the largest remaining tidal freshwater wetlands on the Delaware River. The tidal marshes are flat and regularly flooded by slightly brackish tides. These marshes are considered to be part of the Delaware River Estuary. Both the NJDEP Freshwater Wetland Map and the National Wetland Inventory (NWI) Mapping identify wetland habitats in and around the Site. The tidal reach of the Delaware River is part of the National Estuary Program, a program set up to protect estuarine systems of national significance.

The Site provides habitat for a variety of wildlife species due to the diversity of habitat types present and its location adjacent to a freshwater tidal marsh. The marshes provide habitat for muskrat, ducks and geese. According to the RI, the following fish species have been identified in Woodbury Creek and Hessian Run: mummichog, banded killifish, silvery minnow, alewife, blueback herring, pumpkinseed, brown bullhead, white perch, American eel, goldfish, spottail shiner, carp, bluntnose minnow, black crappie, gizzard shad, eastern mudminnow and golden shiner. According to the Atlantic Coast Ecological Inventory, the Delaware River Estuary contains game fish such as the American shad and the striped bass.

Of the bird species observed at the Site during the RI, the osprey is listed as threatened by the NJDEP Division of Fish and Wildlife. According to the NJDEP Endangered Nongame Species Program, the northern and western portions of the Site and the Woodbury-Hessian Run marshes are considered foraging locations for the bald eagle (see Figure 3). The bald eagle is listed by the U.S. Fish and Wildlife Service as threatened. The NJDEP Division of Fish and Wildlife considers the bald eagle breeding population as endangered and their non-breeding population as threatened.

Groundwater is the source of drinking water within a four-mile radius of the Site. Municipal wells provide the vast majority of this potable water. There are three private water supply wells in the immediate area of the Site; the scrap yard, the residence located adjacent to the scrap yard to the east, and the automobile repair shop located adjacent to the scrap yard to the southwest. The latter of these wells is 103 feet in depth. The depth of the other wells is not known. It is reported that the wells at the scrap yard and the adjacent automobile repair shop are not used for potable purposes. The residential well is used for potable purposes and has a treatment system

reportedly consisting of a 5-micron filter and a three-stage charcoal and sand filter. There are three municipal wells situated within one mile of the Site. The West Deptford Municipal Well No. 6, which is located on Red Bank Avenue near Oakland Road, is located 0.6 miles southeast of the Site and pumps approximately 100,000 gallons per day. This well is 356 feet in depth. National Park Borough operates two wells approximately 280 feet in depth, 0.9 miles northwest of the Site.

The groundwater table is approximately ten feet below the ground surface at the Site. According to the RI, the primary flow of the ground water is towards the southeast. A perched water table exists in the eastern portion of the Site. On the far eastern edge of the Site, the perched water flows to the north into Hessian Run. The remainder of the perched water flows towards the center of the Site and connects with the regional ground water flow heading towards the southeast. It is reported that Woodbury Creek and Hessian Run generally discharge into the ground water except during low tide, when seepage of ground water to the tidal mud flats occur.

3. Site characteristics

The Matteo family acquired the property on which the Site is located in 1947 and reportedly operated a junkyard, recycling facility, and an unregistered landfill since approximately 1961. The NJDEP identified an inactive incinerator at the Site in 1968. The unregistered landfill accepted crushed automotive battery casings and industrial and domestic waste. In 1971, the NJDEP approved a request from the facility to operate the incinerator to burn copper wire and received a plan from the facility for a "sweating fire box" to melt lead battery terminals for lead reclamation. An inspection in 1974 revealed that the approved incinerator was being used to smelt battery parts. The lead melting operation continued until 1985. In 1972, the NJDEP observed landfilling of crushed battery casings in an area of wetlands adjacent to Hessian Run. This operation was apparently performed in conjunction with the lead melting operation, as there were several reports of battery casing incineration and subsequent on-site ash and waste products disposal. At one time, the owner claimed that the crushed battery casings were intended for sale for use in road projects, driveways, and other recycling uses. In 1976 and 1984, there were reports of fires burning at the landfill. The fires involved the waste material that had been placed in the landfill. During the former period, it is reported that the fire burned for three days. In addition to these operations, numerous inspections and complaints through the years revealed drums of waste scattered throughout the property, including in the wooded area near the trailer park. In 1984, drums of D001 and D008 waste were identified at the Site.

Currently, Matteo Iron and Metal operates a scrap metal recycling facility on a portion of the Site closest to Crown Point Road. According to a recent price sheet, the company accepts copper, brass, aluminum, stainless steel, iron, lead, motors, junk cars and batteries. The batteries, which reportedly are a very small part of the business since they are not assigned any value, are reportedly shipped off as received without any lead recovery. A portion of the scrap yard is paved near the entrance and the weigh station. The remainder of the scrap yard is unpaved. Soil contamination has been documented in the unpaved portion of the scrap yard. The remainder of the Site west of the scrapyard is not currently used.

4. Release or threatened release into the environment of a hazardous substance, or pollutant or contaminant

Numerous limited investigations and sampling events have been conducted at the Site over the past several decades. In 1991 during a test pit study conducted by the NJDEP, lead was detected at 39,200 mg/kg at a depth of four feet and total petroleum hydrocarbons were identified at a depth of three feet at 44,600 mg/kg. Surface soil sampling conducted in the junkyard in 1996 by the NJDEP identified the following analytes with their maximum concentrations: lead (19,900 mg/kg), copper (21,100 mg/kg), cadmium (49.6 mg/kg), and arsenic (59.2 mg/kg). Test pits conducted by the NJDEP in 1996 identified the presence of lead at 47,900 mg/kg at a depth of twelve feet. Sediment sampling conducted in 1997 by the NJDEP as part of the Site Investigation (SI) identified lead (8,500 mg/kg) and PCBs (78 mg/kg) in Hessian Run adjacent to the central portion of the crushed battery casing area.

The NJDEP conducted a comprehensive RI during the period of September 2000 to October 2002. The analytical data generated by the NJDEP during the RI revealed elevated levels of lead in the soil throughout the battery casing burial area, the scrap yard, and the adjoining creek sediments around the Site. Additionally, there are noncontiguous spots of soil contamination throughout the Site. PCBs, antimony, copper, arsenic, cadmium, mercury, nickel and zinc were also detected at some locations above NJDEP Nonresidential Direct Contact Soil Cleanup Criteria (NRDCSCC) and Residential Direct Contact Soil Cleanup Criteria (RDCSCC). There were also sporadic detections of polyaromatic hydrocarbons (PAHs) and volatile organic compounds (VOCs) in the shallow subsurface soil.

Soil sampling conducted during the RI within the unpaved portion of the scrap yard revealed the presence of elevated levels of lead, especially in the central area just northwest and west of the pavement. The maximum concentration of lead detected in the soils in this area, at a depth of zero to six inches, was 20,700 mg/kg. The average lead concentration of the soil samples collected in this area, at a depth of zero to twelve inches, was 3,429 mg/kg. According to estimates in the RI, approximately 75% of the six-acre scrap yard is above the NJDEP RDCSCC for lead (400 mg/kg). Table 1 lists a summary of the analysts/compounds identified in surface samples collected in the scrap yard and their respective maximum concentrations.

Table 1: Summary of Analytical Results from Surface Soil Samples Collected in the Scrap Yard at the Matteo Iron and Metal Site (NJDEP RI, March 2004).

Substance	Maximum Concentration Detected (mg/kg)	NJDEP RDCSCC (mg/kg)	NJDEP NRDCSCC (mg/kg)
antimony	865	14	340
arsenic	55	20	20
cadmium	33.3	39	100

copper	2,870	600	600
lead	20,700	400	600
mercury	22.3	14	270
nickel	502	250	2,400
zinc	16,200	1,500	1,500
PCBs	216	0.49	2

Soil samples collected from the 90 test pits completed throughout the Site during the RI revealed a maximum lead concentration of 31,300 mg/kg within the buried waste, at a depth of 1.5 feet, and 11,500 mg/kg below the waste, at a depth of five feet. A test pit along the western boundary of the Site revealed PCBs at a concentration of 460 mg/kg at a depth of 4.5 feet and xylene at a concentration of 280 mg/kg at a depth of three feet. Two of five waste characterization samples collected from soil in the buried waste areas exceeded the Toxicity Characteristic Leaching Procedure (TCLP) limit for lead (5.0 mg/l). One of the two samples that exceeded the TCLP limit was collected from a battery waste area and the other was from a mixed waste area.

Surface soil samples collected during the RI outside of the immediate areas of the scrap yard and the burial areas revealed noncontiguous spots of soil contamination throughout the Site. The lead concentrations in four of the nineteen samples collected ranged from 1,660 mg/kg to 14,500 mg/kg, with the latter concentration being within 50 feet of the trailer park and in the general area of a trail leading onto the Site. The PCB concentrations in two of the nineteen samples ranged from 0.53 mg/kg to 15.2 mg/kg.

Surface soil sampling conducted by EPA within the landfill area during April 2005 generally confirmed previous sample results in the landfill and battery casing burial area with respect to the lead contamination. Soil samples collected in an area of the Site near the border with the trailer park, did not confirm a previous detection of lead at 14,500 mg/kg. The maximum XRF lead concentration from four samples collected in this general area was 277 mg/kg. Three samples collected from lawns in the trailer park, just south and southeast of this area, detected lead at estimated laboratory concentrations of 1,520 mg/kg, 973 mg/kg, and 410 mg/kg. The XRF screening results for these samples were 906 mg/kg, 715 mg/kg and 306 mg/kg, respectively. The lead concentrations within the remainder of the trailer park were all below 200 mg/kg. The four samples collected from the curb on Crown Point Road, outside of the scrap yard entrance and on a dirt roadway that separates the scrap yard and the single residence situated east of the scrap yard, were all below a lead concentration of 400 mg/kg. A sample collected from the eastern lawn of this residence detected lead at an estimated laboratory concentration of 1,400 mg/kg. With respect to PCBs, one sample collected near Hessian Run from within a crushed battery burial area revealed the presence of PCB Aroclor-1254 at an estimated concentration of 200 mg/kg.

During the RI, 416 sediment samples were collected to a depth of three feet from Hessian Run and Woodbury Creek. Lead concentrations in sediment samples exceeded the NJDEP Sediment Quality Criteria Severe Effect Level (SEL) of 250 mg/kg at all of the sampling locations along Hessian Run, with the most contaminated area generally being closest to the central portion of the north shoreline of the Site. The NJDEP Sediment Quality Criteria Lowest Effect Level (LEL) of 31 mg/kg for lead was exceeded at all locations sampled. The maximum concentration of lead detected in the sediments was 35,200 mg/kg at a depth of one to two feet in Hessian Run near the north shoreline. Lead was also detected as high as 19,500 mg/kg at one location near the north shoreline at a three foot depth, the maximum depth sampled. The concentrations of lead in the sediments generally decrease with distance from the north shoreline. PCB concentrations in sediment samples exceeded the SEL (varies based on total organic carbon concentrations) at two locations in Hessian Run. The maximum concentration of PCBs detected was 8.3 mg/kg from the upper six inches of Hessian Run near the creek bank. Arsenic, copper, and zinc also exceeded their respective SELs in Hessian Run near the creek bank.

Surface water samples collected from locations in both Hessian Run and Woodbury Creek during the RI revealed the presence of lead above NJDEP Surface Water Quality Standards (SWQS) ecological criteria (2.5 ug/l) in 20 of the 24 samples and above SWQS human criteria (5 ug/l) in 16 of the 24 samples. The highest lead concentration detected was 87.4 ug/l. In general, samples (unfiltered) collected at low tide had higher concentrations than those collected at the same location at high tide.

As part of the RI, the NJDEP completed an ecological study in the summer of 2003 and issued the Final Aquatic Biota Study in December 2004. Sediment and water samples were collected from ten stations upstream, adjacent to, and downstream of the Site covering both Hessian Run and Woodbury Creek. The stations were located within the main channels of these streams. The highest sediment concentrations of lead and PCBs, 19,600 mg/kg and 35 mg/kg, respectively, were confirmed in Hessian Run at adjacent stations near the central portion of the burial area.

Ground water monitoring conducted at the Site has revealed the presence of lead (6,050 ug/l), nickel (174 ug/l), chromium (164 ug/l), and cadmium (4.4J) in the shallow monitoring wells. Vinyl chloride has been identified in the deep monitoring wells at concentrations as high as 20 ug/l. In May 2004, the NJDEP installed four monitoring wells east of Interstate Highway 295. Three of the wells are located within 0.3 miles of the Site and range in depth from 79 to 92 feet. The highest level of vinyl chloride identified in the off-site monitoring wells is 26 ug/l. Lead was detected in the on-site potable well in 1994 at 57 ug/l. Vinyl chloride has been detected at a maximum concentration of 4.8 ug/l in the potable well of the adjacent tire business. Neither of these wells are reportedly used for potable purposes. The EPA Drinking Water RAL for lead and vinyl chloride are 30 ug/l and 2 ug/l, respectively.

All of the materials listed above, except for petroleum hydrocarbons, are CERCLA designated Hazardous Substances, as listed in 40 CFR Table 302.4. The analytical data presented above is a summary of the most significant data available from the aforementioned reports. It is not meant to be inclusive of all of the analysts or compounds detected at the Site.

Based on test pits conducted during an NJDEP field investigation, the volume of waste material landfilled at the Site is estimated to be 80,000 cubic yards (see Figure 3). Of this total, approximately 23,000 cubic yards consists of battery casings, 22,000 cubic yards of battery casings mixed with general waste, and 35,000 cubic yards of general waste. It is estimated that there are an additional 7,000 cubic yards of battery casings in the sediments of Hessian Run to a depth of three feet, as measured 20 feet from the south bank. Not including the area covered by the battery casings in the sediments of Hessian Run, there are approximately 10,500 cubic yards of sediments to a depth of one foot with contamination greater than the NJDEP SEL Sediment Quality Criteria and approximately 99,500 cubic yards of sediments to a depth of three feet with contamination greater than the SEL. The volume of soil contamination (not including the battery casings) identified above NJDEP RDCSCC across the entire Site is estimated to be 58,000 cubic yards.

The mechanism for past releases to the environment was the business operations and waste disposal practices at the Site. Metals, in particular lead, were recovered from batteries and wiring since the 1950s. Waste materials including: crushed batteries casings, residues from the smelting operation and unknown industrial and domestic solid waste were reportedly deposited at the Site and buried over a period of several decades. The crushed battery casings make up a significant portion of the southern bank of Hessian Run at the Site. The bank of the creek was altered from its original location by the filling operations conducted over the decades.

The presence of exposed, crushed battery casings deposited along Hessian Run over several decades is indicative that there is an ongoing release to the environment. Casings are also evident in the Hessian Run sediments. During low tide, wide mud flats are exposed over which contaminated stored water from the battery casing area flows. Both Hessian Run and Woodbury Creek are tidal and flood the Site during elevated flows on the Delaware River. The flood waters that pass over the Site would tend to cause migration from the highly contaminated areas into the adjacent creeks and other portions of the Site. Flooding of this nature occurred in April 2005 during a period of heavy rainfall and snow melt in the Delaware River Basin. The Site is accessible and is used for recreational purposes. The potential for direct contact with the contaminated soil and crushed battery casings exists that could potentially lead to exposures through inhalation and ingestion.

Future releases of elevated levels of lead and other CERCLA designated Hazardous Substances will continue unabated to Hessian Run should conditions remain unmitigated. Materials released could migrate to areas that have not yet been impacted, affecting human health and the environment.

5. National Priorities List (NPL) status

The Site is not on the NPL. EPA has evaluated the Site for placement on the NPL and has prepared a draft Hazard Ranking System (HRS) package. EPA is awaiting for NJDEP to determine if they want to place the Site on the NPL.

B. Other Actions to Date

1. Previous actions

There have been no previous Federal actions taken at the Site other than those discussed previously.

2. Current actions

Currently, there are no Federal actions taking place at the Site.

C. State and Local Authorities' Role

1. State and local actions to date

The NJDEP has been involved with the Site since at least 1972 with inspections of the landfilling and melting operations. An Administrative Order was issued to the company in 1984 with respect to their waste disposal practices for incinerator ash, a pile of white powder, and drums. The company was issued a Notice of Violation (NOV) in 1991 for significant amounts of solid waste and other materials of environmental concern and subsequently conducted a site investigation. The investigation, which included test pits, revealed elevated levels of lead and total petroleum hydrocarbons at the Site. The case was transferred to the Division of Publicly Funded Site Remediation in 1993 after the company did not conduct any of the required followup investigative activities or proceed with closure of the landfill. The NJDEP conducted a PA/SI in 1996. In July 1997 the NJDEP conducted sampling of surface soils to determine if dioxin was present at the Site and the extent of PCB contamination. Analytical results did not confirm the presence of dioxin.

The NJDEP announced an initiative on April 25, 2005 for accelerating the cleanup of ten major contaminated sites along the Delaware River in an effort to improve the quality of the river. The Matteo Iron and Metal Site was identified on the list.

2. Potential for continued State/local response

At this time it is not known whether there will be any future State or local actions taken at the Site.

III. THREAT TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

A. Threats to Public Health or Welfare

There is a potential exposure to nearby human populations from hazardous substances, pollutants or contaminants (**40 CFR §300.415(b)(2)(i)**). The Site is an insecure area where automotive

batteries were received and either burned or crushed to recover metal. Persons use the inactive portion of the Site for recreational purposes. It appears that the main area of interest is the northwest portion of the Site, within what constitutes the landfill and battery casing area. One of the main paths from the trailer park leads to this area, which is sparsely vegetated and is the location of the campfire remnants. From there, a trail leads to Hessian Run and the exposed battery casings. Persons accessing the Site could potentially be exposed to elevated levels of lead and PCBs through inhalation and/or ingestion of dust or through dermal contact. Use of bicycles or all-terrain vehicles in this area could kick up dust, increasing the risk for potential exposure.

The active portion of the Site is used by workers of the scrap metal recycling facility and customers dropping off material. Heavy machinery is used on the unpaved portion of the facility to segregate, consolidate and prepare the scrap metal for transport. Lead, PCBs and other heavy metals have been documented in the surface soils of the unpaved area. Persons accessing this area could potentially be exposed to elevated levels of lead and PCBs through inhalation and/or ingestion of dust generated by the operations or through dermal contact.

There appears to be an isolated area of lead contamination above the NJDEP RDCSCC in the north central portion of the residential trailer park along the border with the Site. Lead was also detected above the NJDEP RDCSCC in a sample collected on the lawn of the residence situated east of the scrap yard. As such, there is a potential for exposure to lead for persons in these through inhalation and/or ingestion of the soil. Although the samples in the residential locations were collected from grass lawns, which lessens the potential for dusty conditions, the exposure potential is dependent on the quality of the grass cover and the activities that take place over the lawn.

Evidence exists that Hessian Run and Woodbury Creek are used for recreational purposes. There are boat docks and duck blinds present on Hessian Run. This indicates that persons may hunt and fish, providing a potential human exposure pathway if the wildlife are consumed. Lead and PCBs have been identified extensively in the surrounding tidal wetlands ecosystem.

Lead is a cumulative poison where increasing amounts can build up in the body eventually reaching a point where symptoms and disability occur. Particularly sensitive populations are women of child-bearing age, due to the fetal transfer of lead, and children. Cognitive deficits are associated with fetal and childhood exposure to lead. An increase in blood pressure is the most sensitive adverse health effect from lead exposure in adults. Effects on the kidney, nervous system and heme-forming elements are associated with increasing blood lead concentrations, both in children and adults. Other symptoms include: decreased physical fitness, fatigue, sleep disturbance, aching bones, abdominal pains and decreased appetite.

The relationship between soil lead concentrations and the consequent impact on blood levels in children has been studied through numerous epidemiological studies. Based on these epidemiological studies, it is generally believed that persistent exposure to soil-borne lead results in an increase in blood lead levels (in children) of 1 to 9 ug/dl per 1,000 ppm lead in soil. Although this relationship may become less robust as exposure durations decrease and soil lead

levels increase, it nonetheless provides compelling evidence of the potential lead hazard associated with the excessive lead concentrations found in the soil at the Site.

PCBs are readily absorbed into the body by ingestion, inhalation, and dermal exposure following ingestion of dust or soil, inhalation of PCB-laden dust, or direct dermal contact with PCBs in soil or dust. They may persist in tissues for years after exposure stops. Chemical acne, dark patches on skin, burning eyes and skin and unusual eye discharge have been reported by all routes of exposure. Generally, onset may not occur for months. These effects may last for months. Liver damage and digestive disturbance have been reported. PCBs may impair the function of the immune system and at high levels have been shown to produce cancer and birth defects in laboratory animals. Although PCBs are suspected as a human carcinogen, they have a very low potential for producing acute toxic effects. PCBs bioaccumulate to concentrations that are toxic. A number of human studies indicate that PCBs can cross the placenta and locate in the fetus. PCBs also concentrate in human breast milk.

High levels of hazardous substances or pollutants or contaminants in soils, largely at or near the surface, may migrate (**40 CFR §300.415(b)(2)(iv)**). Analytical testing has confirmed the presence of elevated levels of lead and PCBs at the Site in the upper two feet of the soil. During dry conditions this material becomes airborne more readily, especially in the active scrap yard, where the soil is more readily disturbed by heavy machinery and vehicles and near the campfire location. Persons that access the Site can accumulate the material on their shoes and possibly carry it into the home resulting in potential exposures to young children, if present. The crushed battery casings that line the southern bank of most of Hessian Run and come into direct contact with the creek itself during high tide, are a continual source of contamination to the tidal freshwater marshes.

Weather conditions exist that may cause hazardous substances to migrate or be released (**40 CFR §300.415(b)(2)(v)**). During flood events the potential exists for high levels of lead and PCBs to be spread across the Site to areas with lower levels of contamination and to the adjacent residential trailer park. This also increases the potential for further contaminant migration into the creeks when the waters recede. A flood event in April 2005 resulted in approximately half of the Site being inundated at approximately the 100-year flood line.

B. <u>Threats to the Environment</u>

There is an actual or potential exposure to nearby animals or the food chain from hazardous substances, pollutants or contaminants (**40 CFR §300.415(b)(2)(i)**). Acute sediment toxicity testing conducted by the NJDEP revealed that a sample collected at one of the stations in Hessian Run, across from the battery casing burial areas, showed 100% mortality to the benthic organisms tested. Significant mortality was also observed from the sediments near the western portion of the Site, including near the confluence with Woodbury Creek. Surveys conducted as part of the aquatic biota study revealed that both the indigenous benthic macroinvertebrate and fish communities were less diverse at the four stations adjacent to the Site on Hessian Run than at the reference stations. Concentrations of lead detected in the wetland plants at stations near

the Site were considerably higher than the reference stations. In earthworm tissue, lead and PCB concentrations were also considerably higher at the on-site stations than at the reference stations.

The EPA Environmental Response Team (ERT) completed an Ecological Risk Assessment in June 2005 based on the NJDEP Final Aquatic Biota Study Report. The food-chain models indicate that insectivorous birds and mammals are at risk of acute toxicity from the ingestion of lead. Insectivorous and omnivorous birds and mammals are at risk from the ingestion of lead. Insectivorous birds and mammals, omnivorous birds, and piscivorus mammals are at risk from the ingestion of PCBs. In addition, the ecological risk assessment indicates that the wildlife which utilize the area of highest site-related contamination for foraging are at risk. The risk assessment conclusions demonstrate the link between site contaminants and environmental impact in the aquatic and terrestrial ecosystem.

There is actual or potential contamination of sensitive ecosystems (**40 CFR §300.415(b)(2)(ii)**). Extensive tidal wetlands along Hessian Run and Woodbury Creek surround the Site and continue to the Delaware River. Lead and PCBs have been documented in these wetlands. According to the ERT Ecological Risk Assessment, tidal flats function as a nursery and refuge areas for small and developing aquatic organisms. Biota utilizing the tidal flat often rely extensively on the resources available during high tide when fish move to the tidal flat to feed on the resident community. Within the Delaware River system, American shad and striped bass use tidal flats for their nursery function and migration pathways. At low tide, birds and some mammals move onto the tidal flat to feed. The benthic macroinvertebrate community plays a key role in nutrient cycling and organic matter processing, and is a food resource for higher trophic level organisms. Sediment contamination has a direct impact on these organisms due to their direct contact with the media. Upper trophic level predators, such as birds and mammals, that feed on the lower trophic level organisms, can bioaccumulate contaminants that are present in an ecosystem. The osprey's presence at the Site and the bald eagle's use of the Woodbury-Hessian Run marshes as a foraging location are indicative of the ecological sensitivity of the area surrounding the Site and the risk that the CERCLA designated hazardous substances identified at the Site pose to these predators.

High levels of hazardous substances or pollutants or contaminants in soils, largely at or near the surface, may migrate (**40 CFR §300.415(b)(2)(iv)**). Crushed battery casings and elevated levels of CERCLA designated hazardous substances have been identified on the banks of the Site and within sediments of Hessian Run. This waste material is unprotected and readily available to migrate. The surface water is in contact with this material and continually carries the contamination into the tidal flats, making it available for further migration into the Delaware River. This situation has existed for several decades. An impact to the local ecosystem has been documented.

Weather conditions that may cause hazardous substances, or pollutants, or contaminants to migrate or be released (**40 CFR §300.415(b)(2)(v)**). Flood events result in greater portions of the contaminated area coming into contact with the surface water and releasing material into the tidal wetlands that surround the Site. This was the case in April 2005 during a major flood event in the Delaware River watershed.

IV. ENDANGERMENT DETERMINATION

Actual or threatened release of a hazardous substance from the Site, if not addressed by implementing the response action selection in this Action Memorandum, may present an imminent and substantial endangerment to public health, welfare, or the environment.

V. PROPOSED ACTIONS

A. Proposed Actions

1. Proposed action description

The proposed action is to erect a chain-link fence and place warning signs along the portions of the Site that are not fenced and that are not bounded by waterways. These areas would include the southern boundary of the Site near the trailer park and portions of the eastern boundary where fencing does not already exist. The purpose of the proposed action is to restrict public access to the contaminated areas of the site and thereby reduce the human health threats posed by the elevated levels of CERCLA designated hazardous substances that are spread throughout the Site. The proposed action is an interim measure, designed to protect human health by attempting to minimize direct contact with the highly contaminated areas at the Site, but will not reduce the contamination levels and therefore will not alleviate the remaining human health and ecological concerns.

At the conclusion of this removal action, contamination will still exist at the Site. The proposed action will not address the issues listed below.

- The tens of thousands of tons of battery carcasses and heavily contaminated soils either in direct contact with a tidal estuary of the Delaware River or within the estuary's floodplain.
- The heavily contaminated sediments in Hessian Run.
- The presence of soil contamination at the active facility.
- The contaminated ground water underlying and downgradient of the Site.
- The availability of access to the Site along Hessian Run, Woodbury Creek and from the active portion of the Site.

Additional comprehensive response actions will be required to address the threats to human health and the environment posed by the contamination that will remain at the site, as noted above.

2. Contribution to remedial performance

The removal action at the Site will, to the extent practicable, contribute to the efficient performance of any long-term remedial action with respect to the release or the threatened release. The Site is not on the NPL, however the proposed removal action is not expected to impede any future responses. This limited action will attempt to minimize direct contact threats until a more comprehensive response action is undertaken.

3. Description of alternative technologies

Alternative technologies were not considered for the proposed action.

4. Engineering Evaluation/Cost Analysis (EE/CA)

Since this is a time-critical removal action, this section was not applicable.

5. Applicable or relevant and appropriate requirements (ARARs)

Federal ARARs were not considered due to the limited scope of this removal action.

6. Project schedule

It is expected that this removal action will take two months to complete once funding is received and the action is initiated.

B. Estimated Costs

A summary of the estimated costs for the proposed action is presented below.

Extramural Costs:

Regional Removal Allowance Costs:	
Cleanup Contractor Costs (ERRS)	$ 97,439
ERRS Costs Contingency (10%)	$ 9,743
Total Cleanup Contractor Costs (ERRS) (rounded to nearest thousand)	$107,000
Other Extramural Costs Not Funded from the Regional Allowance	
Total RST, including multiplier costs	$ 5,000
Subtotal, Extramural Costs	$112,000
Extramural Costs Contingency (20% of total Extramural Costs; rounded to nearest thousand)	$ 22,000
TOTAL, REMOVAL ACTION PROJECT CEILING	**$134,000**

VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

Should no action be taken, or the planned action delayed, access to the Site will continue unabated, continuing the risk of persons coming into direct contact with the waste material and contaminated soil present at the Site.

VII. OUTSTANDING POLICY ISSUES

None.

VIII. ENFORCEMENT

EPA has not yet completed its investigation into whether Potentially Responsible Parties (PRPs) can be identified for this Site. There have been no CERCLA 104e Request for Information Letters issued to date.

The total EPA costs for this removal action based on full-cost accounting practices that will be eligible for cost recovery are estimated to be $195,450.

This estimate includes direct costs, which include direct extramural costs and direct intramural costs, and indirect costs. Indirect costs are calculated based on an estimated indirect cost rate expressed as a percentage of site-specific direct costs, consistent with the full cost accounting methodology effective October 2, 2000. These estimates do not include pre-judgement interest, do not take into account other enforcement costs, including Department of Justice costs, and may be adjusted during the course of a removal action. The estimates are for illustrative purposes only and their use is not intended to create any rights for responsible parties. Neither the lack of a total cost estimate nor deviation of actual total costs from this estimate will affect the United States' right to cost recovery.

These estimated costs are summarized below:

Direct Costs = Direct Extramural + Direct Intramural Costs = $134,000 + $16,000 = $150,000
Indirect Costs = Region II Indirect Cost Rate x Direct Costs = 30.30% x $150,000 = $45,450
Estimated EPA Costs for a Removal Action = Direct Costs + Indirect Costs = $195,450

IV. RECOMMENDATION

This decision document represents the selected removal action for the Matteo Iron and Metal Site in West Deptford, Gloucester County, New Jersey, developed in accordance with CERCLA, as amended, and is not inconsistent with the NCP. This decision is based on the administrative record for the Site.

Site conditions meet the NCP Section 300.415(b)(2) criteria for a removal action. The total removal action project ceiling for this action is $134,000, of which $107,000 is for contract mitigation and will be funded from the Regional removal allowance.

Please indicate your approval of this Action Memorandum for the Matteo Iron and Metal Site, as per current Delegation of Authority, by signing below.

APPROVAL: William McCabe **DATE:** 9-30-05

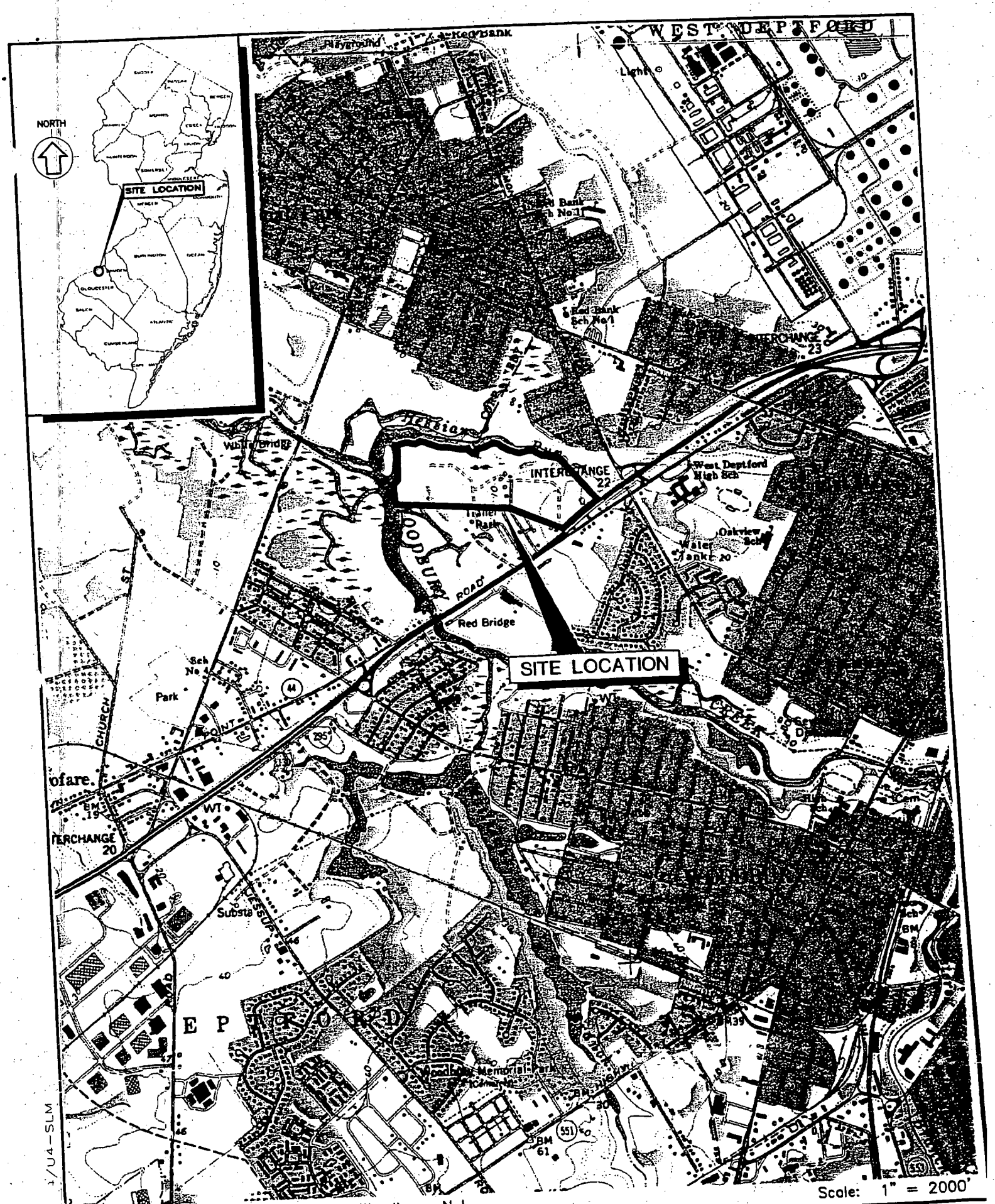
George Pavlou, Director
Emergency and Remedial Response Division

DISAPPROVAL: _____ **DATE:** _____

George Pavlou, Director
Emergency and Remedial Response Division

cc: G. Pavolou, ERRD-D
W. McCabe, ERRD-DD
R. Basso, ERRD
R. Salkie, ERRD-RAB
J. Witkowski, ERRD-RAB
G. Zachos, ACSM/O
C. Petersen, ERRD-NJRB
D. Karlen, ORC-NJSFB
T. Mitchell, ERRD-NJRB
P. Brandt, PAD
R. Manna, OPM-FMB
T. Riverso, OPM-GCMB
D. Cristiano, ORC-NJSFB
T. Grier, 5202G
P. McKechnie, OIG
M.Pederson, NJDEP
A. Raddant, USDOI
J. Steger, NOAA
C. Kelley, RST

Figure 1



Source: USGS 7.5 Min. Quadrangle, Woodbury, N.J.

N.J. Department of Environmental

MATTEO IRON AND METALS – GLOUCESTER COUNTY, NEW JERSEY

SITE LOCATION MAP

The Louis Berger Group, Inc.
30 Vreeland Road
Florham Park, NJ

FIGURE 1-1

OC/26N 1/U4-SLM

Figure 2

Legend

- Pile Samples
- Landfill Samples
- Contaminated Soil Samples
- Background Samples
- Probable Point of Entry
- Approximate Boundary of Matteo Property
- HRS Eligible Wetlands
- Source 1: Battery Casing Waste Pile
- Source 2: Inactive Landfill
- Source 3: Contaminated Soil

References:
1. Lewis Berger Group, Inc. Remedial Investigation and Removal Action Selection Evaluations, Matteo Site and West Deptford, New Jersey, prepared for ...
2. New Jersey Department of Environmental Protection, May, 2004
3. National Wetlands Inventory Map. Name not available. U.S. Department of the Interior, Fish and Wildlife Service, St. Petersburg, FL
4. New Jersey 2002 High Resolution Orthophotography. State of New Jersey Office of Information Technology, Office of Geographic Information Systems

Figure 2
Source Location Map
Matteo and Sons, Inc.
Thorofare, Gloucester County, NJ

FIGURE NO. 3	SCALE 1:1,800	DATE JUNE 2005

UNITED STATES ENVIRONMENTAL PROTECTECTION AGENCY

MATTEO AND SONS, INC.

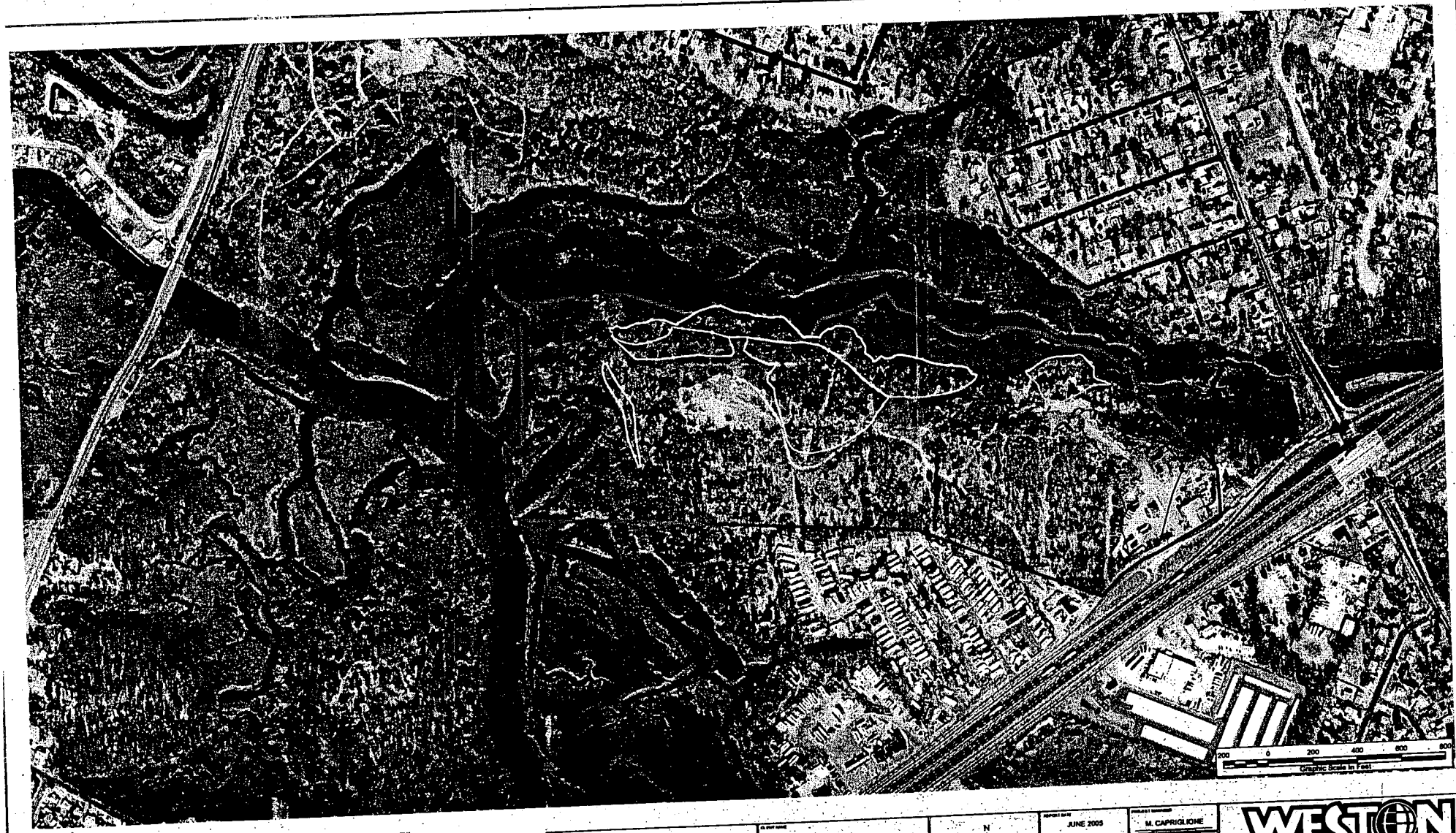
N W E S

REPORT DATE JUNE 2005	PROJECT MANAGER M. CAPRIGLIONE
DOCUMENT NO. 02081	CHECKED BY G. GILLIAND
REVISION NO. 1	CONTRACT NO. 68-W-00-121
WORK ORDER NO. 20103.001.001.1137.00	APPROVED FOR RELEASE BY J. LYNES DATE OF RELEASE 06/14/05

WESTON SOLUTIONS

Weston Solutions, Inc.

Figure 3



Legend

- Bald Eagle Foraging Location
- Approximate Boundary of Matteo Property
- Source 1: Battery Casing Waste Pile
- Source 2: Inactive Landfill
- Source 3: Contaminated Soil

References
1. Louis Berger Group, Inc. Remedial Investigation and Remedial Action Selection Evaluations, M. Matteo Iron and Metal, West Deptford, New Jersey, prepared for New Jersey Department of Environmental Protection, May, 2004.
2. New Jersey 2002 High Resolution Orthophotography, State of New Jersey Office of Information Technology, Office of Geographic Information Systems.
3. New Jersey Department of Environmental Protection (NJDEP), Division of Fish, Wildlife, Endangered Nongame Species Program (ENSP) Landscape Data Project; Feburary 2004.

Figure 3
Bald Eagle Foraging Location Map
Matteo and Sons, Inc.
Thorofare, Gloucester County, NJ

FIGURE 4 | SCALE 1:2,400 | DATE JUNE 2005

UNITED STATES ENVIRONMENTAL PROTECTECTION AGENCY

MATTEO AND SONS, INC.

N W E S

JUNE 2005	M. CAPRIGLIONE
02080	G. GILLIAND
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20103.001.001.1137.00	J. LYNES 06/14/05

WESTON SOLUTIONS

Weston Solutions, Inc.